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Program Aid 1289

Eradicating Cattle Brucellosis



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Cattle brucellosis can be devastating to owners of infected herds.

Infected cattle may abort, are often slow breeders, and can become sterile. They generally lose 20 percent of their milk-producing ability. Infected herds can have 40 percent fewer calves than normal. Trade restrictions accompanying lengthy but necessary quarantine can add to herd owner costs.

Also called Bang's disease or contagious abortion, brucellosis in this country is mainly a problem in cattle, and to lesser extent, in swine. Other animal species such as sheep and goats may become infected.

Brucellosis can be transmitted from animal to humans as undulant fever. Since the disease is not transmitted from one human to another, eradication of brucellosis in livestock will eliminate the human health hazard.

Eradication or control?

Ridding the Nation's livestock of this insidious, costly disease is the top priority of State and Federal animal health officials.

Eradication measures themselves are costly and often inconvenient. It's important to note, however, that very nearly the same measures would have to be enforced in a program merely aimed at controlling brucellosis. And a control program would have to go on endlessly, compounding cost and inconvenience. So it makes sense to think in terms of eradication—to wipe out brucellosis once and for all.

The goal

Today, less than three-tenths of 1 percent of the Nation's cattle are infected with brucellosis. But this small percentage remains a continuing threat to the entire cattle industry. The goal of the national eradication program is to protect those herds that are free of brucellosis while striving to eliminate the disease in the few infected ones.

Many States have had no infected herds for a year or longer. A good many others have low herd infection rates. The eradication task is greatest in 10 Southeastern and South-Central States that have about 90 percent of the remaining infected herds. These States are: Alabama, Arkansas, Florida, Kentucky, Louisiana, Mississippi, Missouri, Oklahoma, Tennessee, and Texas.

How eradication works

The technology is available to wipe out brucellosis—from a herd, a county, a State. Basically, eradication involves surveying the U.S. cattle population to find which herds are infected. These herds are placed under quarantine to prevent infected or exposed animals from being moved and spreading the disease to other herds. Then all eligible animals in such herds are tested, and the infected ones are sent to slaughter.

Identification of market animals, surveillance testing to find infected animals, investigation of infected herds, and use of Strain 19 vaccines are important features of the current program.

The new reduced-dosage Strain 19 vaccine greatly reduces the chance of false positive blood tests and allows vaccinating at 4 to 12 months of age.

Following are some questions and answers to help dairy and beef cow producers understand more about brucellosis eradication.

What causes brucellosis in cattle?

A bacterial organism known as *Brucella abortus* is usually the cause. Very rarely, brucellosis in cattle may be caused by two other types of *Brucella*: *Brucella suis*, commonly associated with the disease in swine, and *Brucella melitensis* in goats.

How do cattle get brucellosis?

They get it by nuzzling or licking infected cows, aborted fetuses or placentas, or occasionally by eating or drinking contaminated food or water. The infected, pregnant animal is the most common source of infective material which is discharged in great quantity at the time of abortion.

What are the signs of brucellosis?

You can't tell if a cow is infected by looking at her. The most obvious signs are abortion, birth of weak calves, and retained placentas. An infected cow may give birth to a normal calf, however, and still spread bacteria in the fluid that escapes her uterus.

How is the disease spread to the other herds?

With few exceptions, brucellosis is carried from one herd to another by infected or exposed animals. This happens when a herd owner buys replacement cattle

which are infected or have been exposed to infection prior to purchase. Infection can also spread from a neighboring farm that's infected, by contact of cattle through fences or use of a common pasture. Contaminated boots or clothing of visitors, or equipment, can also introduce disease.

What is the incubation period?

This period—from the time a disease agent enters an animal's body until it shows itself in some way—is quite variable for brucellosis. This fact complicates detection. A positive reaction to a blood test usually develops within 60 days, although it may take several months. Abortion usually occurs 1 to 4 months after midgestation exposure.

How is the disease diagnosed?

Laboratory tests are made on milk or blood samples, or by culturing the organism from infected tissues, milk, or other suspected fluids. The milk ring test and the blood serum agglutination test are effective and reliable for large-scale testing and screening. They detect antibodies which are a part of the body's defense mechanism. Official tests now include the rivanol and complement-fixation tests in addition to the standard tube and plate tests and card test (still official for certain uses). Various supplement tests are also available to aid diagnosis.

How are infected herds located?

There are five basic ways:

- Milk ring testing of all dairy herds.
- Market cattle testing of all breeding cattle at slaughter or at first assembly points.
- Testing all herds having contact with an infected herd.
- Testing by practicing veterinarians who suspect brucellosis.
- Testing all herds in areas which are heavily infected.

Which animals are eligible for brucellosis testing?

Testing must include:

- At slaughter, all cattle 2 years of age and older.
- At market or prior to private sales, all cattle over 18 months of age.
- For herd tests, all cattle over 6 months of age.

Exceptions:

Steers and spayed heifers are not tested. Official calfhood vaccinates of dairy breeds under 20 months of age and those of beef breeds under 24 months of age are usually exempt. Heifers that have calved and those in advance stages of pregnancy, however, are tested regardless of age or vaccination status. Though currently not required, it's advisable to include all calfhood vaccinates over 6 months of age in a herd test.

Can brucellosis be cured or prevented?

There is no known cure for brucellosis in cattle. Vaccination along with sound herd management can go a long way toward preventing the disease from entering a herd.

How important is vaccination?

USDA authorities recommend vaccinating female cattle with reduced dosage Strain 19 vaccine—especially in class C and B States and in herds that regularly ship replacement heifers to such States.

For movement into or within class C States, program standards require all female breeding cattle born after January 1, 1984, and more than 4 months of age to be official vaccinates, identified by eartag and tattoo. Those of dairy breeds moving into or within class B States also must have evidence of official vaccination.

Age limits for vaccination are 4 to 12 months. Under program standards, however, States may specify upper age limits less than 12 months. The optimum age for vaccination is 5 months. In high risk areas, USDA officials recommend whole-herd vaccination, which includes female breeding cattle more than 12 months of age. Adult vaccinates are identified by AV brand or tattoo.

Any questions in vaccination should be referred to an accredited veterinarian or a State or Federal animal health official. Only they are authorized to vaccinate for brucellosis.

How is the disease eliminated from a herd?

When the disease is diagnosed in a herd, infected cattle must be sold for slaughter. Exposed cattle are quarantined until tests confirm that the herd is free of infection.

USDA may pay an indemnity to owners of cattle destroyed because of brucellosis. Proof of slaughter

is required. Some States also pay an indemnity; the amounts vary.

Can the owner sell cattle from a quarantined herd?

Yes, but only to slaughter or to a quarantined feedlot, either directly or by way of a specifically approved livestock market.

What about brucellosis in swine and other animals?

The incidence of swine brucellosis is very low compared with cattle brucellosis. Efforts to eradicate swine brucellosis are underway in all States, and several major hog-producing States have already eliminated the disease.

Eradication efforts will eventually have to deal with brucellosis in elk, American bison, and Alaskan caribou to eliminate these potentially dangerous reservoirs of infection. Brucellosis in sheep and goats is a major problem in many countries, but not in the United States. Brucellosis also may occur in dogs, horses, chickens, and certain wildlife; but these occurrences do not often result in transmission of disease to cattle or swine.

How do humans get brucellosis?

Humans get brucellosis usually through direct contact with infected animals, although unpasteurized milk or milk products can be a source. Undulant fever, or human brucellosis, is an occupational disease of stockmen and veterinarians who work with animals aborting or calving and of slaughterhouse workers who come in contact with organs of infected animals.

How can cattlemen keep from getting undulant fever?

Cattlemen can protect themselves by cleaning and disinfecting calving areas and other places which are likely to become contaminated with infective material by wearing rubber or plastic gloves when assisting cows during calving, and by not drinking unpasteurized milk or other dairy products.

How can the cattleman keep his herd brucellosis-free?

(1) Raise own replacement heifers or only buy test-negative cattle from known brucellosis-free herds.

(2) Isolate and retest all herd replacements 45 to 120 days following purchase.

(3) Transport cattle only in vehicles that have been cleaned and disinfected.

(4) Vaccinate female calves at the recommended age, or insist upon getting official vaccinates when buying replacement heifers.

(5) Keep visitors out of livestock areas, and don't exchange bulls with a neighbor.

(6) Keep fences in good repair; avoid use of community pastures.

(7) Follow good sanitation practices on the farm; separate animals before calving if possible.

(8) Regularly consult a veterinarian on herd health matters and get veterinary assistance immediately if cows abort or calve early.

(9) Obey all quarantine and shipping rules.

(10) Encourage others to cooperate in the fight to wipe out brucellosis.

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